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SANITATION OF PUBLIC INSTITUTIONS

By CHARLES F. WINGATE

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HOW TO EXAMINE AN INSTITUTION

As an aid to the managers and Advisory Boards and committees of charitable or correctional institutions and to volunteer visitors to such institutions I submit the following hints as to how to determine the sanitary condition of a building of this class, based upon my professional experience of many years.

In approaching such a building one should first notice its surroundings and general appearance. Is it shut in by other buildings? Is it open to the free circulation of air? Are there many trees to obstruct sun and air and create and foster damp? Is the site high and dry or low and damp? Are the buildings of brick, stone, or wood? Do rain and melted snow soak into the ground around the foundations? Is the roof-water carried away from the building so as not to saturate the soil? Are there abundant windows? Does the building face so as to have the benefit of the prevailing summer breeze? Are there sheltered yards or walks for exercise in pleasant weather? Is the general aspect cheerful and wholesome or bleak and forbidding?

On entering the building: Is the in-door atmosphere fresh and pure, or is it stale, close, and stoggy,—a combination of odors from kitchen and laundry, and of floors scrubbed too frequently until they become water-soaked? Are the inmates pallid, inert, and tired, and do the employees look nervous, worn, and anxious? Do flowers and vines flourish, and is there any sunlight apparent or any circulation of air? Where plants thrive human beings do also, as they both require light and air, while plants suffer from dust and a dry atmosphere. Darkness and dirt are akin. It is impossible to keep a place clean if there are dark corners and general dinginess. In one of the finest hospital buildings in the world the corridors are lighted by gas by day, and in the matron's bathroom I

had to strike a match to distinguish the porcelain tub. It is marvellous how little regard to light is paid by most builders. It is a crying evil in houses of every class and size.

Examine the cracks in the floor, and if they are full of wet dirt, as is often the case, it shows too much swilling of water over old, rotting floors. I prefer using a damp mop to such wholesale methods, which may do for a ship's deck, but not for a corridor or dining-room occupied by human beings.

Let us now investigate the cellar and basement, for the underpinning of a building is the vital part. It affects the whole structure. If we find dirt, disorder, cobwebs, and neglect there, we may condemn the management at once. In the cellar is the heating apparatus and air supply. There fuel is stored and often the refrigerator, hence the importance of having it sweet and dry, light and airy. "Houses, like plants, must not have wet feet," and a damp cellar is the worst of all evils. Therefore look sharply for signs of damp. If the pipes and other metal work are rusty, if the plastered ceiling bulges or has fallen in large patches and the exposed laths "buckle," if the cracks in the stone or brick flooring are black with moisture, if the beams and posts have become mere punk with dry rot, so that a knife will penetrate them like cheese, or if the walls are clammy with moisture, then the cellar should be condemned. Vegetables will rot there, cobwebs and mildew flourish, and mould and decay abound. Cellar air will rise to every floor and penetrate every crack and crevice. If it is foul and damp, it debilitates and weakens the inmates and subjects them to colds and to increased danger of infection. Show me a house exposed to such influences, and I will guarantee a continuous crop of little ailments, and regular outbreaks of typhoid, diphtheria, and grip when they are prevalent. You cannot have health where there is constant in-door damp.

Next look at the plumbing. If the drain-pipes are hidden underground, then suspect them. They should be exposed to view along the side-wall or ceiling. If they are of brick or stone, so much the worse. If they have sagged or are not properly supported, they need bracing up. Are they light cast iron, brittle and rusted, of thin metal and short hubs? then they should be replaced with extra heavy cast iron. See that the lead in the joints does not protrude, owing to unequal expansion and contraction, and that the lead shows the marks of the plumber's calking tool. If pipes are pieced with pieces of sheet lead or tin wrapped with wire, it proves chokage with grease and that some botch plumber has been meddling with them. If there are traps or man-holes to open for removing obstructions, which have flat, round covers, see that they are tight, as they easily work loose, and should be replaced by brass trap screws.

Note if areas are protected from dead leaves and dirt, and if open to rain and snow, that the latter do not soak into a hole in the ground.

Are there windows on opposite sides of the cellar to insure a cross-current of air, and are they ever opened? Are ashes stored for any time in the cellar? Are the coal-bins so high as to obstruct light and air circulation? Are there any plumbing fixtures in the cellar, excepting a sink to draw water? If so, they are not desirable.

What is the source of the fresh-air supply? Is it likely to be contaminated from coal-dust, sheet-dust, or ashes? How long since the cold-air box was cleaned? Is it made of galvanized iron, or of unseasoned wood full of cracks and openings for cellar air to enter? Lastly, are there any recesses in the walls where drain-pipes are carried which allow cellar air to rise to upper floors?

Having discussed the immediate surroundings and the cellar, I will now consider the basement of the building. Of course, everyone understands why it is wrong to occupy a ground-floor for sleeping purposes. Yet one so often finds basements and even cellars used as living-rooms in hotels, apartment houses, and other buildings that it is proper to refer to the matter. It is bad enough to place plumbing fixtures in such places, but no person should sleep on the ground-floor under any circumstances.

We may next examine the store-rooms and refrigerators where milk, ice, and food are kept, and note if they are properly located and kept clean and sweet. Light is an important aid to cleanliness, and such receptacles should not be placed in dark corners where they are apt to be neglected. The less woodwork there is about such places the better. If they can be constructed with cement floors, so as to be occasionally washed down with a hose, it will be advantageous. Milk should not be placed directly on ice or in the same compartment with articles that may taint it. A refrigerator should not connect directly with a sewer or house-drain, but should have a waste-pipe separately trapped which discharges over an open sink in the cellar. This should also be trapped, unless it has an independent outlet. This waste-pipe should be frequently flushed with boiling water and soda, as it soon gets slimy and foul.

In this connection let me say a warning word about filters. There are scores of different devices for filtering water. In many places some such appliance is indispensable. No filter, however, can be trusted unless it can be periodically cleaned. The more impurities it collects, the more it becomes itself a source of contamination, and unless the current can be reversed and the filtering material thoroughly purified, it is to be condemned. In the most perfect filters the material is not only washed in this way, but it is oxidized by forcing a current of air through it under

great pressure, and thus all impurities are destroyed. The importance of care in selecting the right kind of a filter cannot be overstated.

Laundries in institutions are often very objectionable. They are badly located, at the foot of hall stairs or in places where the steamy vapor can rise to upper floors. Or they are dark and gloomy, and usually too small and wholly unventilated. A laundry in an institution should be detached from the main building and should be spacious and well lighted. There should be abundant ventilation, and the health of the laundresses should be duly considered. The comfort and health of domestic employees might well receive more attention. Better sleeping-accommodation should be provided. Two adults should never occupy the same bed. More baths for servants' use should be provided, with rooms where they can rest when ill and overworked. The appearance of domestic servants in general does not indicate that they enjoy the best of health, and few of them are as ruddy and robust as they might be.

Every precaution against fire should be taken in laundries, especially in drying-rooms and around stoves and other heating apparatus. Such places should be provided with automatic sprinklers, and fire extinguishers should be hung in plain view. Pails of fine sand or sifted ashes are very useful for putting out small fires, and are less troublesome than water-buckets, which are apt to be forgotten and the water allowed to evaporate or become foul and offensive.

In inspecting a kitchen in an institution it is well to inquire how the food is prepared; whether the cooking utensils are scrupulously clean; where garbage is kept, and how often it is removed. Sinks should be scoured and their traps kept free from grease by frequent doses of potash dissolved in boiling water. Pails, kettles, and other utensils should not be stored under sinks, but in closets, as they may jam the lead pipes and thus do much mischief. Such closets and all store-rooms should be light and airy. It is a common blunder for architects and builders not to arrange windows to properly light living- and work-rooms. Sinks and wash-tubs will be placed in dark corners; hall-ways will be quite dark or in a twilight gloom. Lamps or gas must be used most of the time, and as a result the help are never contented or comfortable.

We shall never get these mistakes corrected until there are more women architects, and I am surprised that women are not consulted more about such essentials.

[The prospect, in the near future, of nurses fitting themselves for positions as sanitary inspectors is discussed in many directions. We know of nurses who would like to study the technical part of such work, and *THE AMERICAN JOURNAL OF NURSING* will be pleased to receive inquiries in regard to such study.—ED.]